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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/627,398

07/25/2003

Rama Mukherjee

U 014450-3

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04/25/2006

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EXAMINER

CHONG, YONG SOO

ART UNIT

PAPER NUMBER

1617

DATE MAILED: 04/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/627,398	<b>Applicant(s)</b> MUKHERJEE ET AL.	
	<b>Examiner</b> Yong S. Chong	<b>Art Unit</b> 1617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 17 February 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-16, 18-20, 22, 23, 25-27 and 32-42 is/are pending in the application.
- 4a) Of the above claim(s) 1-15, 19, 20, 22, 23, 25-27 and 32-38 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 16, 18, 39-42 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>2/17/06</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Status of the Application***

This Office Action is in response to applicant's arguments filed on 2/17/2006. Claims 17, 21, 24, 43 have been cancelled. Claims 1-15, 19-20, 22-23, 25-27, 32-38 have been withdrawn. Claim 16 has been amended. Claims 1-16, 18-20, 22-23, 25-27, 32-42 are pending. Claims 16, 18, 39-42 are examined herein. Applicant's arguments have been fully considered but found not persuasive for reasons of record. The 35 USC 103 rejection of the last Office Action is repeated below to reflect the changes to the claims.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham vs John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Art Unit: 1617

Claims 16, 18, 39-42 are rejected under 35 U.S.C. 103(a) as being obvious over Liu et al. (Biochem. Cell Biol. Vol. 78, 2000, p. 447-453) in view of Barone et al. (US Patent 5,405,863).

The instant claims are directed to a method of treating cardiac toxicity, myocardial ischemia, myocardial infarction, or heart failure comprising administering 5-methoxytryptamine.

Liu et al. teach that pineal indoles, such as 5-methoxytryptamine (abstract), have antioxidative properties and are a potent scavenger of free radicals (pg. 1, col. 1-2, paragraph 1-2). Male rats were injected with 5-methoxytryptamine at a concentration of 5 mg/kg body weight (abstract) in alcoholic saline (pg. 448, col. 2, paragraph 2). It was found that the activity of superoxide dismutase was enhanced (abstract). Liu et al., however fails to disclose that antioxidants or free radical scavengers can be used to treat cardiac toxicity, myocardial ischemia, myocardial infarction, or heart failure.

Barone et al. teach that antioxidants or oxygen radical scavengers can protect the cardiovascular system including the heart from oxidative damage, particularly myocardial infarction (col. 1, lines 12-23). More specifically, antioxidant enzymes such as superoxide dismutase are taught to treat the significant increase in lipid peroxidation in patients with myocardial infarction (col. 2, lines 33-43).

Examiner would like to point out that biological mechanisms are inherent processes that follow administration of a drug. In the present invention, administration of 5-methoxytryptamine inherently results in the increase of activity of superoxide dismutase enzyme, inhibition of lipid peroxidation, reduction of creatine kinase-MB

Art Unit: 1617

levels, and reduction of lactate dehydrogenase levels, thus are given no patentable weight.

“Products of identical chemical composition can not have mutual exclusive properties.” Any properties exhibited by or benefits from are not given any patentable weight over the prior art provided the composition is inherent. A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the disclosed properties are necessarily present. *In re Spada*, 911 F.2d 705, 709, 15 USPQ 1655, 1658 (Fed. Cir. 1990). See MPEP 2112.01. The burden is shifted to the applicant to show that the prior art product does not inherently possess the same properties as the instantly claimed product.

Therefore, it would have been prima facie obvious to a person of ordinary skill in the art, at the time the claimed invention was made, to administer 5-methoxytryptamine to patients suffering from cardiac toxicity, myocardial ischemia, myocardial infarction, or heart failure.

A person of ordinary skill in the art would have been motivated to administer 5-methoxytryptamine to patients suffering from cardiac toxicity, myocardial ischemia, myocardial infarction, or heart failure because of the expectancy to effectively treat the diseases with the antioxidative and free-radical scavenging properties of 5-methoxytryptamine.

### ***Response to Arguments***

Applicant's arguments are directed to the new limitation that recites "wherein the cardiac toxicity, myocardial ischemia, myocardial infarction or heart failure is induced by an anthracycline antineoplastic." Examiner views this new limitation as having little patentable weight because the claims are directed to a method for treating cardiac toxicity, myocardial ischemia, myocardial infarction or heart failure. The method disclosed by the prior art references will indeed treat such disorders irrespective of their etiology or cause. Furthermore, applicant argues that each separate reference does not teach every limitation, which is improper since this is a 35 USC 103(a) obviousness rejection.

In response to applicant's arguments against the references, one cannot show nonobviousness by attacking references individually where the rejections are based on the combination of references. See *In re Keller*, 642 F. 2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F. 2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Applicant also argues that not all molecules, which show antioxidant or free radical scavenging properties, have cardioprotective action and are not in all probability useful for treating cardiac toxicity, myocardial ischemia, myocardial infarction or heart failure. This argument is not persuasive because not all molecules need to have these antioxidant or free radical scavenging properties, just a few to suggest a teaching that such molecules could have cardioprotective action. Examiner would like to thank the applicants for the data on melatonin, however it is not commensurate with the scope of the claims.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

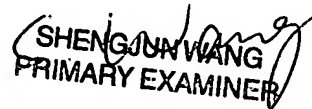
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yong S. Chong whose telephone number is (571)-272-8513. The examiner can normally be reached on M-F, 9-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, SREENI PADMANABHAN can be reached on (571)-272-0629. The fax phone number for the organization where this application or proceeding is assigned is (571)-273-8300.

Art Unit: 1617

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

YSC

  
SHENGJUN WANG  
PRIMARY EXAMINER